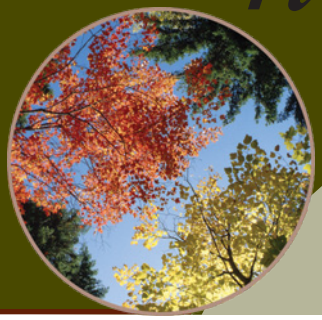
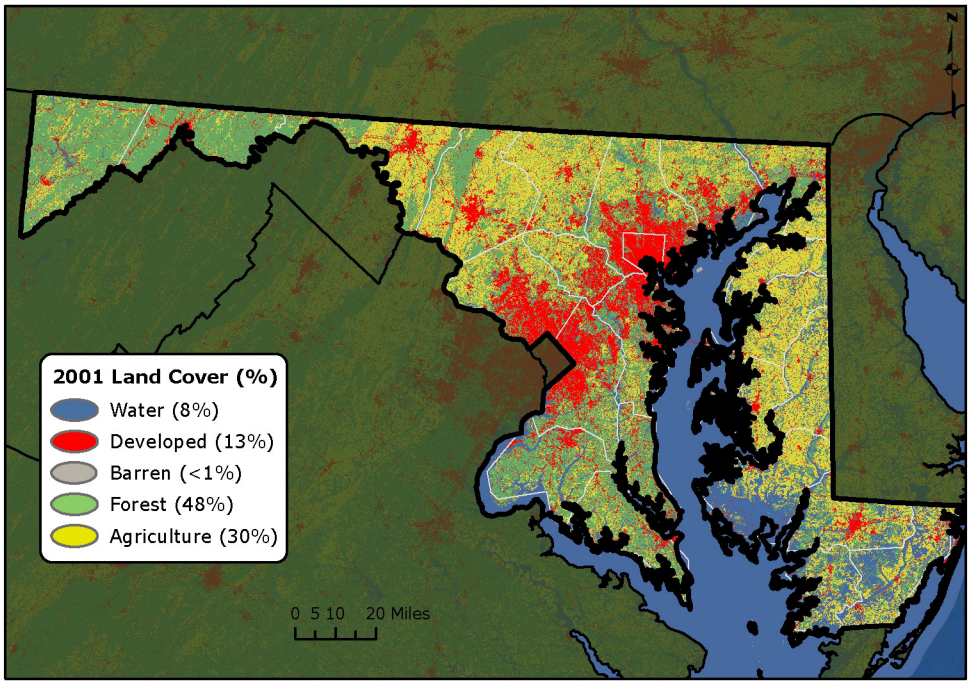
2010 Forest Health highlights

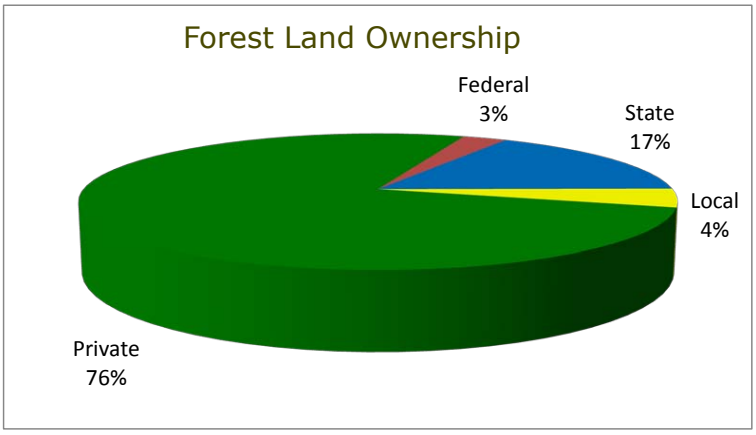
MARYLAND



The Resource

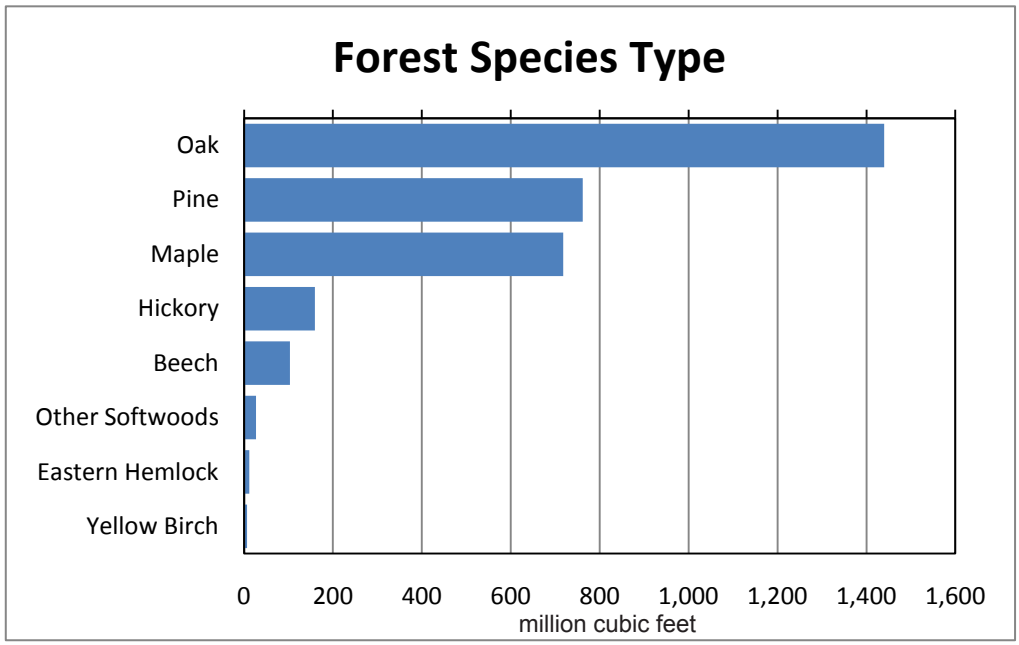
Maryland occupies a land area of 6,255,800 acres. Forest land comprises 2,565,800 acres of which nearly 76 percent is privately owned. Healthy, productive forests are critical in urban and rural areas for soil conservation, clean air and water, wildlife habitat, outdoor recreation, and aesthetics. The forest products industry is the largest employer in Allegany and Garrett Counties and the second largest employer on the Eastern Shore.





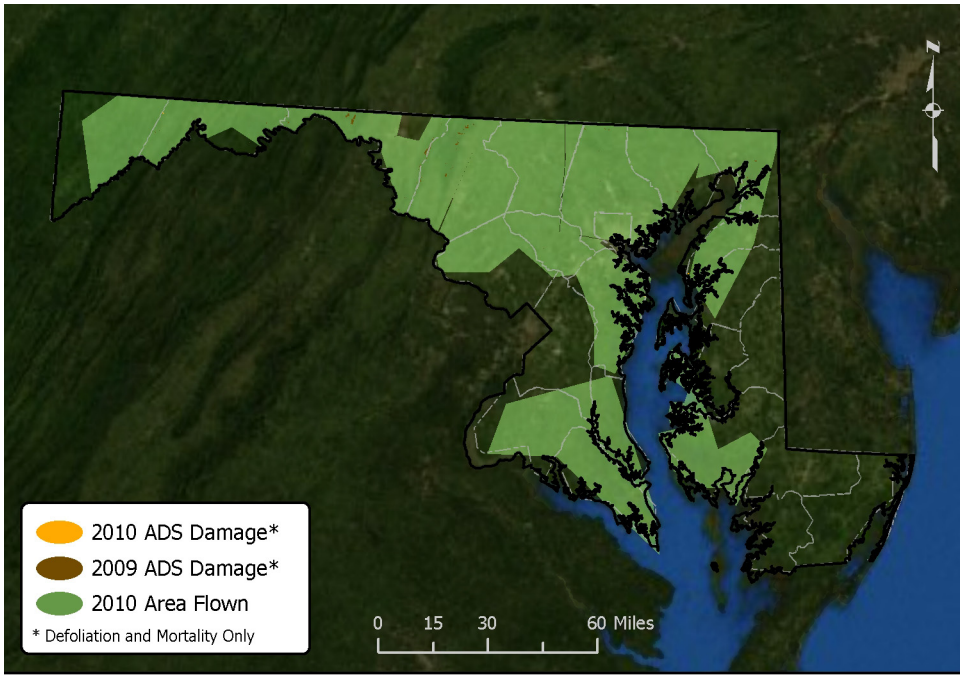
Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

Of the acreage flown in the 2010 aerial detection survey in Maryland, 682 acres of damage were recorded. The majority (544 acres) were damaged by the gypsy moth. Chemicals damaged approximately 100 acres and southern pine beetle damaged 34 acres.



This map delineates aerial detection survey (ADS) results for Maryland in 2009 and 2010.

Forest Health Monitoring

The national Forest Health Monitoring (FHM) Program has two components: plot network and off-plot survey. The U.S. Forest Service Northern Research Station's Forest Inventory and Analysis staff administers the plot network in Maryland. The plot network is designed to annually monitor, assess, and report on changes in the long-term condition of trees, soils, lichens, and air quality in forests.

The Maryland Department of Agriculture conducts the off-plot survey component of FHM. The objectives of the [Maryland] FHM Program are delimiting, mapping, and reporting forest pest problems as a supplement to the FHM plot network. Aerial and ground surveys, data collection, and reporting are conducted in accordance with FHM standards for air operations and GIS. Figure 1 illustrates forest damage survey results for Maryland in 2010.

Forest Pest Issues

Gypsy Moth

Egg mass surveys conducted in the fall of 2009 indicated damaging infestation levels in one county. In the spring of 2010, 144 acres were treated in Talbot County. Maryland experienced no defoliation. Surveys indicate that treatments will hopefully decrease to 0 acres in 2011.

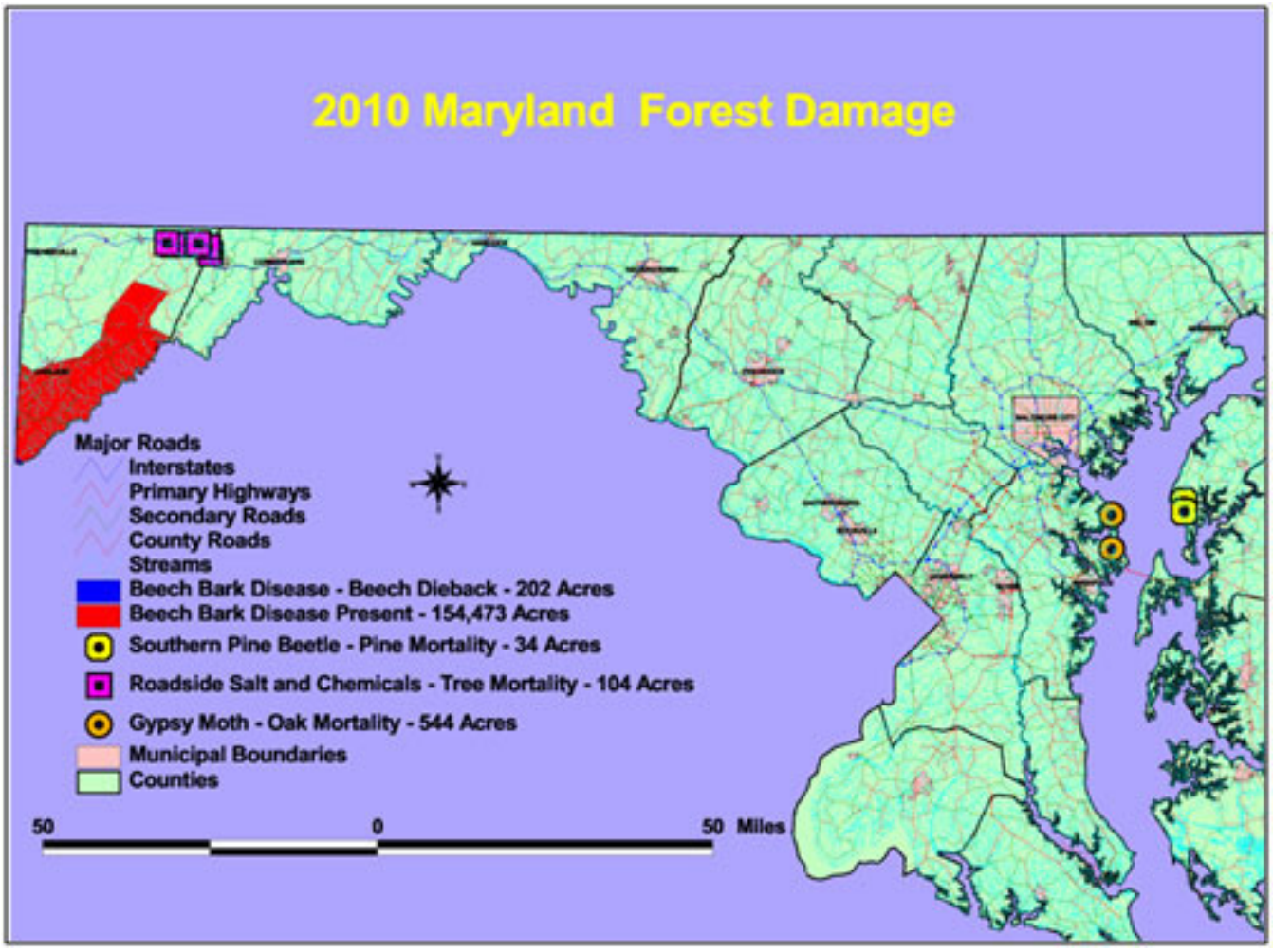


Figure 1. Map of forest damage survey results for Maryland in 2010.

Bark Beetles

In cooperation with the United States Department of Agriculture, the Maryland Department of Agriculture (MDA) has operated an insect trapping network for the **pine shoot beetle** (*Tomicus piniperda*) for the past decade. Based on 2010 results (19 of 51 trap sites in 15 counties were positive), this introduced pest of *Pinus* from Europe has been newly detected in **Baltimore, Carroll, Harford, and Howard Counties**, which now join **Garrett, Allegany, Washington, Frederick, and Montgomery Counties** under State and Federal quarantines for pine shoot beetle. Since the initial U.S. detection in Ohio in 1992, this small bark beetle now occurs in 17 States, including Pennsylvania, West Virginia, and Virginia. Southern pine beetle populations continue to remain low in the State, but two infestations have been discovered in Kent County. This is the furthest north the southern pine beetle has been detected in Maryland.

Hemlock Woolly Adelgid (HWA)

HWA remains the major threat to the health of eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington and in natural stands from Harford to Garrett Counties. As part of a mid-Atlantic multistate survey, eight plots have been set up in six counties to assess the HWA impact on hemlock stands (figure 2).

The potential for HWA biological control by the predatory beetle *Laricobius nigrinus* was evaluated in the Frederick City watershed and in Rocky Gap State Park in Allegany County during 2004. *Laricobius nigrinus* was recovered from Rocky Gap in 2005,

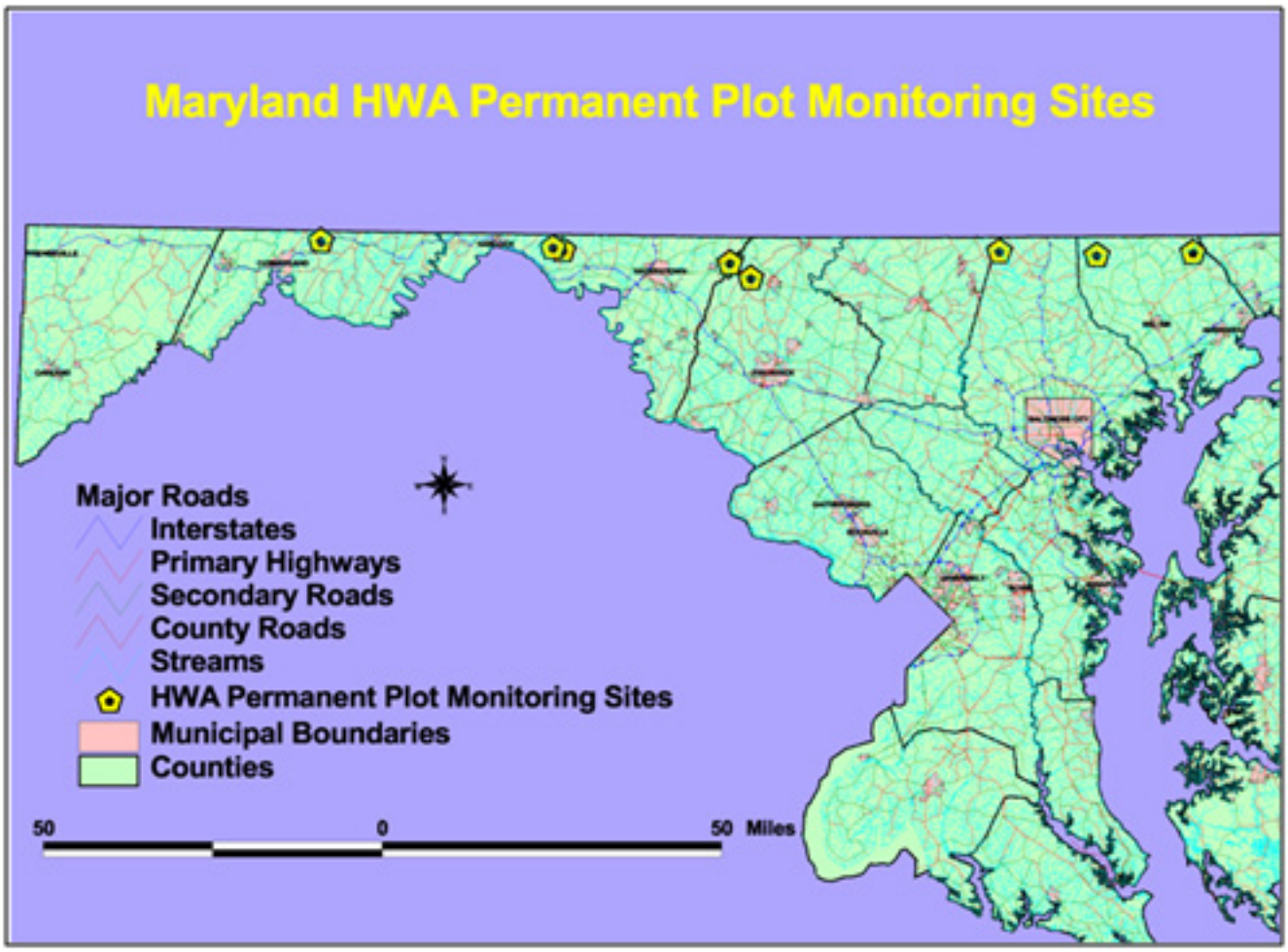


Figure 2. Location of HWA permanent plot monitoring sites in Maryland.

2006, 2007, 2009, and in 2010. The beetle release site in the Rocky Gap gorge has been declared an established population after recoveries in 2007. Recoveries have been so numerous that efforts have begun to establish a field insectary at Rocky Gap with the hopes of harvesting enough *L. nigrinus* in future years to release in other areas of the State. Additional releases have been made at Rocky Gap in an effort to establish this field insectary. The beetles have also been recovered from a release site at the Fredrick City watershed.

More beetle releases were made in 2007 at Rocky Gap, Hagerstown watershed, Pretty Boy Reservoir, and the Broad Creek Boy Scout Camp. In 2008, additional *L. nigrinus* releases were made at Rocky Gap, Broad Creek, Savage River State Forest, Frederick City watershed, and Potomac State Forest. In 2009, additional *L. nigrinus* releases were made at Rocky Gap. In 2010, releases of 150 *L. nigrinus* were made in Rocky Gap for a total of 8,162 in total released statewide. Two other predatory beetle species, *Scymnus sinuanodulus* and *Sasajiscymnus tsugae*, were released at several different sites, with no recoveries made.

Figure 3 illustrates *Laricobius nigrinus* release sites in Maryland from 2003 through 2010.

Federal Fiscal Year (October 1, 2009, to September 30, 2010)
Soil Injection = 1,782 trees (15,901 in d.b.h.) at 4 sites
Trunk Injection = 435 trees (5,253 in d.b.h.) at 5 sites

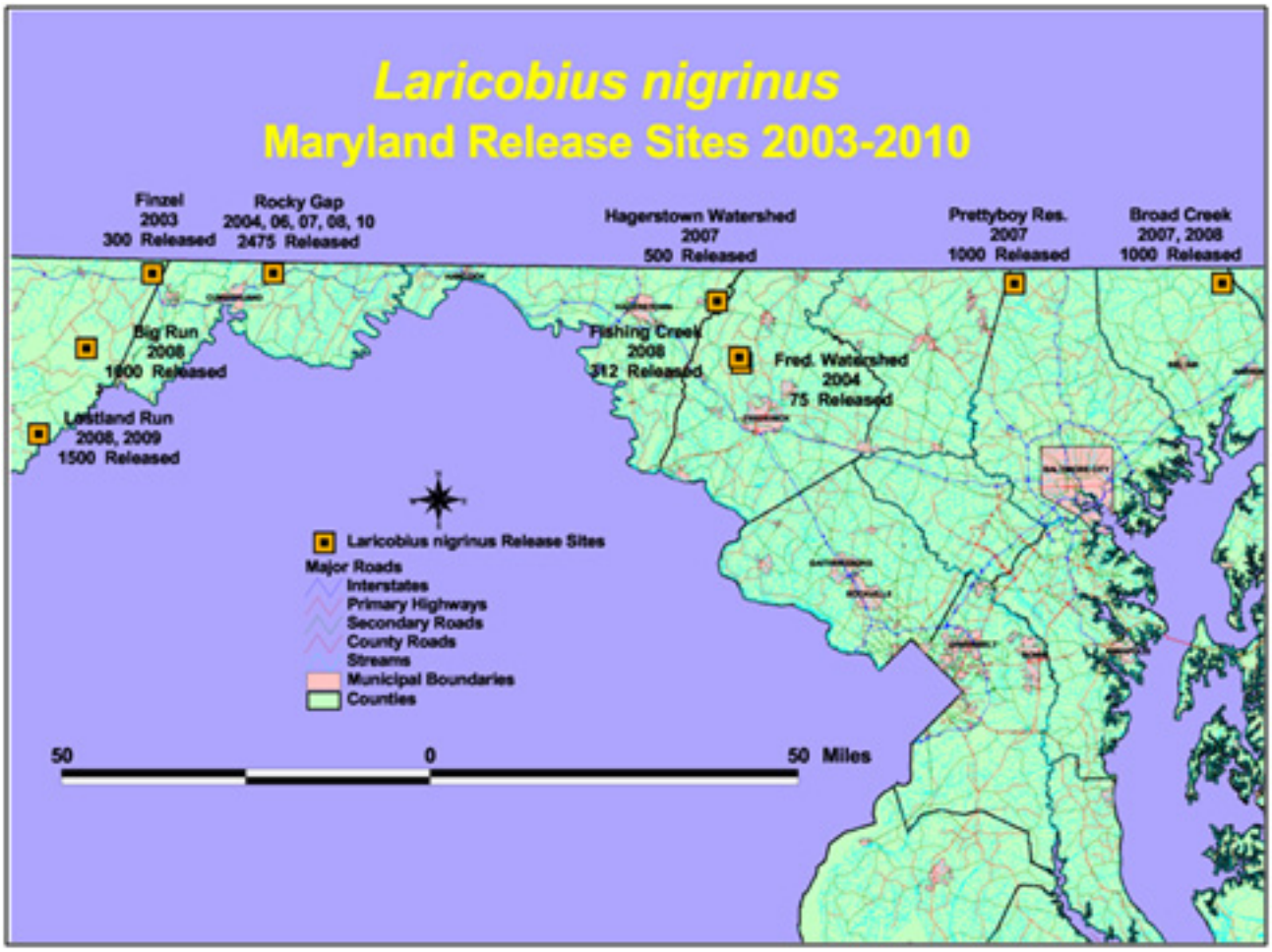


Figure 3. Laricobius nigrinus *release sites in Maryland from 2003 through 2010.*

Totals 2004 to September 30, 2010
Soil Injection = 4,531 trees (44,424 in d.b.h.) at 15 sites
Trunk Injection = 797 trees (11,019 in d.b.h.) at 11 sites

Totals (by County) 2004 to September 30, 2010
Soil Injection:
Baltimore = 1,514 trees (15,567 in d.b.h.)
Frederick = 1,196 trees (6,799 in d.b.h.)
Garrett = 993 trees (13,939 in d.b.h.)
Washington = 828 trees (8,118 in d.b.h.)

Figure 4 illustrates the location of publicly owned hemlock stands that are a priority for HWA suppression in Maryland.

Trunk Injection:
Baltimore = 367 trees (5,220 in d.b.h.)
Frederick = 272 trees (3,194 in d.b.h.)
Garrett = 126 trees (1,999 in d.b.h.)
Washington = 32 trees (606 in d.b.h.)

Special Issues

Emerald Ash Borer (EAB)

Infested ash trees were found at a Maryland nursery in August 2003. Infested ash trees from Michigan were sent to the Maryland nursery in April 2003 and some of these trees were sold as part of the nursery's landscaping business. The remaining trees and other ash that became infested at the nursery were destroyed by MDA staff. MDA Plant Protection staff had traced forward ash trees sold by the

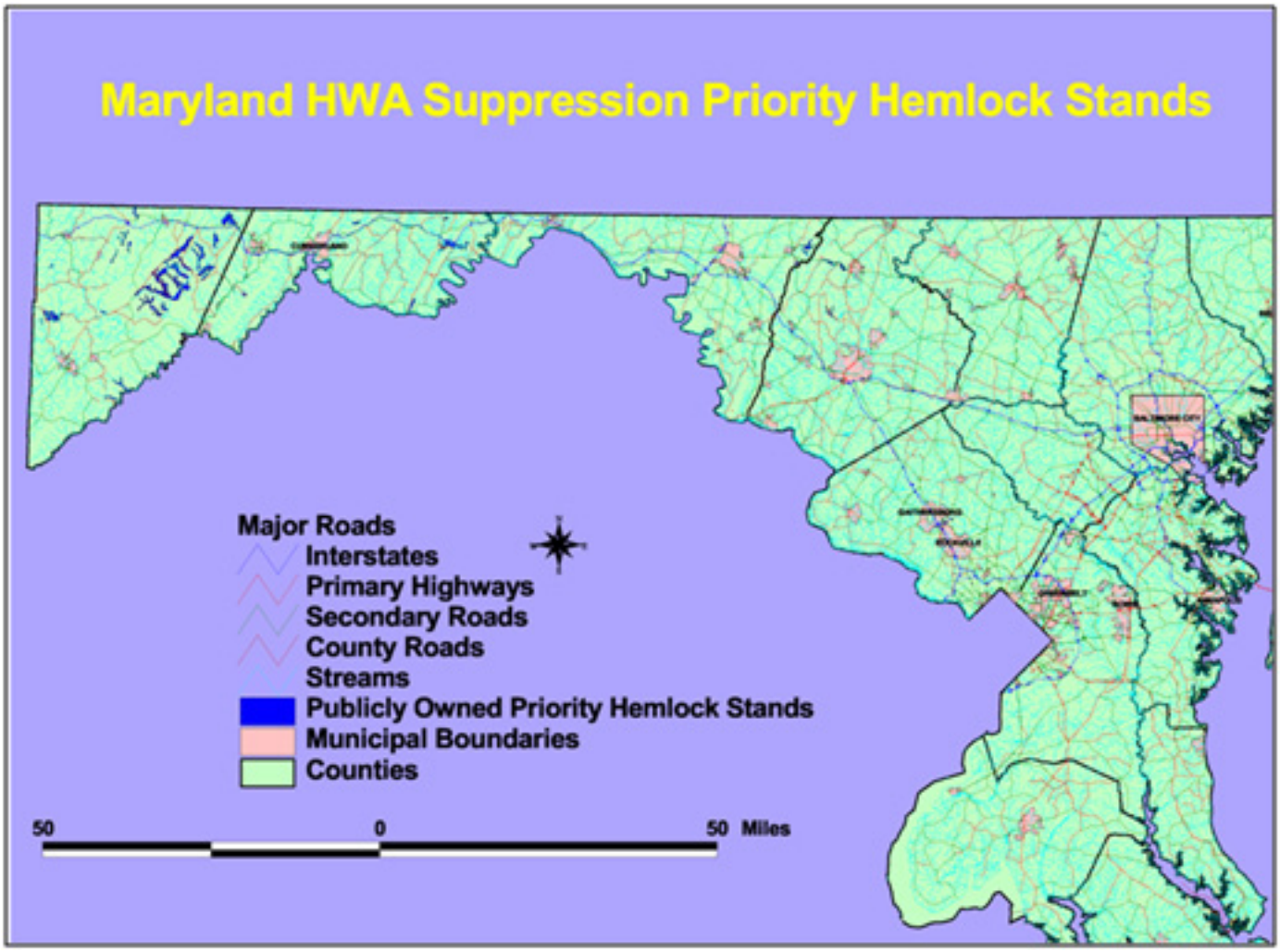


Figure 4. Location of publicly owned hemlock stands that are a priority for HWA suppression in Maryland.

Maryland nursery and removed most of these ash trees. Additionally, all ash trees within ½ mile of the infested nursery were cut and burned in the early spring of 2004.

MDA Forest Pest Management and Plant Protection staff conducted visual surveys and monitored trap trees in areas that had infested ash trees. Plant Protection staff conducted a purple trap survey in many areas of the State. No EAB were caught outside of the infested area. Forest Pest Management staff set up 40 purple traps in Baltimore County. In August 2006, EAB larvae were found in trap trees near the original infestation. A large-scale detection and eradication project was initiated. Additional detections of EAB life forms in the area have forced the eradication zone to be expanded. The project is ongoing and has gone from eradication to containment. The result is that Prince Georges and Charles Counties are now quarantined for this insect.

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